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10/807,545	03/24/2004	Mitsuaki Osame	12732-223001 / US7068/714	3777
26171	7590	07/06/2007	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			LAO, LUN YI	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/807,545

**Applicant(s)**

OSAME ET AL.

**Examiner**

LUN-YI LAO

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/2/2004 and 3/24/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because the abstract of the disclosure contains two paragraphs. Correction is required. See MPEP § 608.01(b). The abstract should be in narrative form and generally limited to a **single paragraph** on a separate sheet within the range of 50 to 150 words.

### *Drawings*

2. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 7,173,586.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim the same subject matter of a light-emitting device comprising: a pixel comprising: a light-emitting element, a first transistor for deciding a value of a current flowing to the light-emitting element, and a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal, wherein the light-emitting element, the first transistor, and the second transistor are connected in series between a first power unit and a

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third power unit, and wherein a gate electrode of the first transistor is connected to a second power unit. Comparing the present application with the Patent No. 7,173,586 as below:

10/807,545 (claim 1)	7,173,586(claim 1)
A light-emitting device comprising: a pixel comprising: a light-emitting element,	A light emitting device with a pixel comprising: a light emitting element;
a first transistor for deciding a value of a current flowing to the light-emitting element	a first transistor for determining a current value flowing in the light emitting element
a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal,	a second transistor for determining a light emission or non-emission of the light emitting element according to a video signal;
the light-emitting element, the first transistor, and the second transistor are connected in series between a first power unit and a third power unit,	the light emitting element is connected in series to the first transistor and the second transistor between a first power supply and a third power supply,
a gate electrode of the first transistor is connected to a second power unit.	a gate electrode of the first transistor is connected to a second scan line,

5. Claims 1-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-40 of U.S. Patent No. 7,141,934 in view of Koyama(US 2001-0002703).

US Patent No. 7,141,934 teaches a light-emitting device comprising: a pixel comprising: a light-emitting element, a first transistor for deciding a value of a current flowing to the light-emitting element, and a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal, wherein the light-emitting element, the first transistor, and the second transistor are connected in series between a first power unit and a third power unit.

US Patent No. 7,141,934 fails to disclose a gate electrode of the first transistor is connected to a second power unit.

Koyama teaches a light-emitting device comprising a gate electrode of the first transistor(112) is connected to a second power unit(113)(see figures 1-3 and paragraphs 116-117). It would have been obvious to have modified the US Patent(7,141,934) with the teaching of Koyama, so the first and second transistors could be controlled individually and to prevent a decrease in the number of gradations(see paragraph 43).

6. Claims 1-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-40 of U.S. Patent No. 7,122,969 in view of Koyama(US 2001-0002703).

US Patent No. 7,122,969 teaches a light-emitting device comprising: a pixel comprising: a light-emitting element, a first transistor for deciding a value of a current flowing to the light-emitting element, and a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal,

wherein the light-emitting element and a gate electrode of the first transistor is connected to a second power unit..

US Patent No. 7,122,969 fails to disclose the first transistor, and the second transistor are connected in series between a first power unit and a third power unit.

Koyama teaches a light-emitting device comprising the first transistor(112), and the second transistor(109) are connected in series between a first power unit(Vn or 110) and a third power unit(113) )(see figures 1-3 and paragraphs 116-117). It would have been obvious to have modified the US Patent(7,122,969) with the teaching of Koyama, so as to prevent a decrease in the number of gradations(see paragraph 43).

7. Claims 1-29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-52 of copending Application No.10/840611. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim the same subject matter of a light-emitting device comprising: a pixel comprising: a light-emitting element, a first transistor for deciding a value of a current flowing to the light-emitting element, and a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal, wherein the light-emitting element, the first transistor, and the second transistor are connected in series between a first power unit and a third power unit, and wherein a gate electrode of the first transistor is connected to a second power unit. Comparing the present application with the Patent Application No. 10/840,611 as below:

10/807,545 (claim 1)	10/840,611(claim 1)
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A light-emitting device comprising: a pixel comprising: a light-emitting element,	A light emitting device comprising: a light emitting element formed over a substrate;
a first transistor for deciding a value of a current flowing to the light-emitting element	a first transistor for determining a current value flowing in the light emitting element
a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal,	a second transistor for determining a light emission or non-emission of the light emitting element according to a video signal;
the light-emitting element, the first transistor, and the second transistor are connected in series between a first power unit and a third power unit,	the light emitting element, the first transistor and the second transistor are connected in series between a first power supply and a second power supply
a gate electrode of the first transistor is connected to a second power unit.	a gate electrode of the first transistor is connected to a second scan line,

this is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 1-29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No.10/803,190(US 20040252565) in view of in view of Koyama(US 2001-0002703).

The US Copending Application teaches a light-emitting device comprising: a pixel comprising: a light-emitting element, a first transistor for deciding a value of a



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current flowing to the light-emitting element, and a second transistor for deciding a light emission or non light emission of the light-emitting element depending on a video signal, wherein the light-emitting element and a gate electrode of the first transistor is connected to a second power unit..

The US Copending Application fails to disclose the first transistor, and the second transistor are connected in series between a first power unit and a third power unit.

Koyama teaches a light-emitting device comprising the first transistor(112), and the second transistor(109) are connected in series between a first power unit(Vn or 110) and a third power unit(113) )(see figures 1-3 and paragraphs 116-117). It would have been obvious to have modified the US Copending Application with the teaching of Koyama, so as to prevent a decrease in the number of gradations(see paragraph 43).

9.

This is a provisional obviousness-type double patenting rejection.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-2, 4, 8, 14, 26-27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Koyama(US 20010002703).

As to claims 1-2, 4, 8, 14, 26-27 and 29, Koyama teaches a light-emitting device comprising: a pixel comprising: a light-emitting element(111 or 1006), a first transistor(112 or 1009) for deciding a value of a current flowing to the light-emitting element(111 or 1006) , and a second transistor(109; or 1004) for deciding a light emission or non light emission of the light-emitting element depending on a video signal(Sn or 107 or 1103), wherein the light-emitting element(111, 1006), the first transistor(112 or 1009), and the second transistor(109 or 1004) are connected in series between a first power unit(Vn or 1005) and a third power unit(opposite electrode, e.g ground voltage) and wherein a gate electrode of the first transistor(112) is connected to a second power unit(113 or 1010) (see figures 1-3, 4B, 7A, 7B18, 20A , 23; paragraphs 13-16, 148-152 and 113-118).

As to claim 2, Koyama teaches a third transistor(105) for controlling an input of the video signal(Sn)(see figures 1-3 and paragraphs 116-117).

As to claims 4 and 14, Koyama teaches the first transistor(1009) and the second transistor(1004) are identical in conductivity(can be both P-Channel or N-channel transistors)(see figure 7A and paragraphs 150-152).

As to claims 26-27 and 29, the copending application teaches the light-emitting device is incorporated into at least one selected from the group consisting of a cellular phone, a mobile computer, a game machine, an electronic book, a video camera, a

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digital camera, a goggle display, a display device, and a navigation system(see figures 17A-17E and paragraphs 345-350).

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1-29 provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 10/803,190(US 2004/0252565) which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application.

As to claims 1-29, the copending application(10/803,190 or US 20040252565) teaches a light-emitting device comprising: a pixel comprising: a light-emitting element(404), a first transistor(402) for deciding a value of a current flowing to the light-emitting element(404) , and a second transistor(403) for deciding a light emission or non light emission of the light-emitting element depending on a video signal(Si), wherein the light-emitting element(404), the first transistor(402), and the second transistor(403) are connected in series between a first power unit(Vi) and a third power unit(counter

electrode) and wherein a gate electrode of the first transistor(102) is connected to a second power unit(the voltage hold on the capacitor(405))(see figures 2, 4A and paragraphs 42-45).

As to claim 2, the copending application teaches a light-emitting device comprising: a third transistor(401) for controlling an input of video signal(Si)(see figures 2, 4A and paragraph 44).

As to claim 3, the copending application teaches a fourth transistor(406) for forcing the light-emitting element(104, 204) into a non-emission state irrelevant from the video signal (see figures 2, 4A and paragraph 44).

As to claims 4, and 14-15, the copending application teaches the first transistor(402) and the second transistor(403) are identical in conductivity (P-type or N-type)(see figures 2, 4A and paragraph 42).

As to claims 5, 11, 16-17 and 20-21, the copending application teaches the first transistor(402) comprises a depletion type(normally-on)(see figures 2, 4A, paragraphs 105, 107 and claims 3-4).

As to claims 6, 12, 18-19 and 22-23, the copending application teaches the first transistor(402) has a channel length longer than a channel width, and the second(403) transistor has a channel length equal to or shorter than a channel width(see figures 2, 4A; paragraph 31, and claims 1-2).

As to claims 7, 13 and 24-25, the copending application teaches a ratio of the channel length to the channel width of the first transistor is 5 or more(see figures 2, 4 and paragraph 31).

As to claim 9, the copending application teaches each of the first transistor(402) and the second transistor(403) has a P-type conductivity, and a threshold value of the first transistor is higher than that of the second transistor(see figures 2, 4 and paragraph 31).

As to claim 10, the copending application teaches each of the first transistor and the second transistor has an N-type conductivity, and a threshold value of the first transistor is lower than that of the second transistor(see claim 12).

As to claims 26-29, the copending application teaches the light-emitting device is incorporated into at least one selected from the group consisting of a cellular phone, a mobile computer, a game machine, an electronic book, a video camera, a digital camera, a goggle display, a display device, and a navigation system(see claims 16-22).

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 3, 15 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama(US 20010002703) in view of Kimura(2002/0113760).

Koyama fails to disclose a fourth transistor for forcing the light-emitting element into a non-emission state irrelevant from the video signal.

Kimura teaches a light-emitting device comprising a fourth transistor(740) for forcing the light-emitting element into a non-emission state irrelevant from the video signal(Si)(see figures 1A, 1b, 17A-17B and paragraphs 150-1160). It would have been obvious to have modified Koyama with the teaching of Kimura, so even if the number of bits of digital signal is increased, an image can be displayed without decreasing a frame frequency(see paragraph 160).

As to claims 15, Koyama teaches the first transistor(1009) and the second transistor(1004) are identical in conductivity(can be both P-Channel or N-channel transistors)(see figure 7A and paragraphs 150-152).

As to claim 28, the copending application teaches the light-emitting device is incorporated into at least one selected from the group consisting of a cellular phone, a

mobile computer, a game machine, an electronic book, a video camera, a digital camera, a goggle display, a display device, and a navigation system(see figures 17A-17E and paragraphs 345-350).

16. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama(US 20010002703) in view of Kimura(2002/0113760) and Yamazaki(6,207,969).

Koyama as modified fail to disclose a depletion type transistor.

Yamazaki teaches a light-emitting device comprising a depletion type transistor for driving a light-emitting element(EL)(see figures 1-2B, 14; column 1, lines 13-15 and lines 46-53). It would have been obvious to have modified Koyama with the teaching of Yamazaki, so a transistor could be formed on a signal crystal silicon film by an intrinsic semiconductor in a silicon on insulator(see column 1, lines 45-53).

17. Claims 5, 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama(US 20010002703) in view of Yamazaki(6,207,969).

Koyama fail to disclose a depletion type transistor.

Yamazaki teaches a light-emitting device comprising a depletion type transistor for driving a light-emitting element(EL)(see figures 1-2B, 14; column 1, lines 13-15 and lines 46-53). It would have been obvious to have modified Koyama with the teaching of Yamazaki, so a transistor could be formed on a signal crystal silicon film by an intrinsic semiconductor in a silicon on insulator(see column 1, lines 45-53).

### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sano(6,246,384) teaches an LED display comprising a first transistor(20) and a second transistor(52) connected in series.

Yoshida(7,187,350) teaches an LED display comprising a first transistor(Tr2) and a second transistor(Tr5) connected in series.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

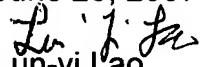


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Lun-yi Lao

**Primary Examiner**